Q Z X

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EDITOR'S NOTES

K5XY

I have heard that a newsletter devoted to the ZX-81 is starting up in Canada. Because many QZX readers use that model Sinclair computer, I am trying to get more information. See this column next month.

I have gotten a scanner for one of my computers. It is fun to use and should be useful. The article on adding a monitor to one or another of the Sinclair computers has the diagrams scanned into the article on this accessory. It will make it much easier to put diagrams and pictures into QZX. It is supposed to have some software that permits typewritten material to be put into the computer as characters, not as a picture. The software, called OCR (optical character reading) software is supposed to have a 97% recognition rate. I guess it does recognize 97% of the characters. Unfortunately it recognized about 30% of them wrongly. Still I hope it will reduce any retyping that I might have to do to get some articles into QZX. We will see.

It does have the further advantage that I can now scan programs into QZX instead of retyping them. This procedure should reduce the errors introduced by retyping. Thus I encourage all readers to send a good clean copy of any programs that they use to me for reproduction here. Even if your program is not complicated send it in. Others will find it useful.

The cost of printing QZX just went up 80%. The place where I had been having it done got rid of their high volume xerox machine because it was always breaking down and not doing a good job. They have promised higher quality in return for the increased price, but I suspect that most of the difficulty with QZX comes from my originals.

Things happen in spurts. There has been a TS1000 advertized for sale in the Unclassified ads for a couple of months. Today, just after somebody picked it up, a check for it appeared for it in the mail. There still is one 16 K RAM offered for free.

QZX FRIENDS

W6OOA -- Al renewed and had a few kind words to say about the new style.

WA6DLI -- Bob just obtained a new Z88. Perhaps we will hear a bit about that computer in the near future.

WA4BQE -- Ed renewed and said he was sorry to be late with the renewal. But he was not. It was just me late with the issue.

KF5GG -- George picked up another TS1000 and contributed some to the postage fund.

ZX MONITORS

K5XY

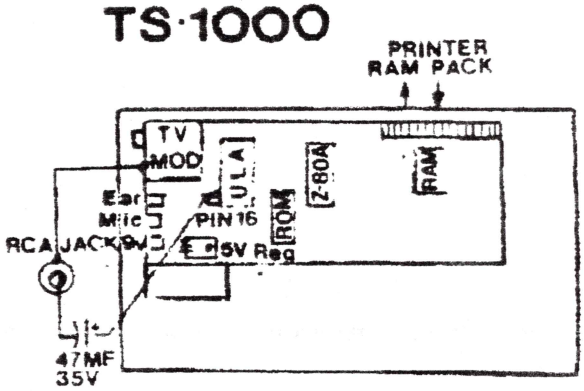
QZX has run articles before on how to add monitors to your ZX Sinclair. A recent article in the Indiana Sinclair Times Users Group newsletter inspired me to collect together some diagrams from various sources which suggest ways of conveniently bypassing the RF modulator which comes in these computers.

The ZX81, TX1000, and TS1500 are all basically the same computer. Here I give diagrams specialized for each one.

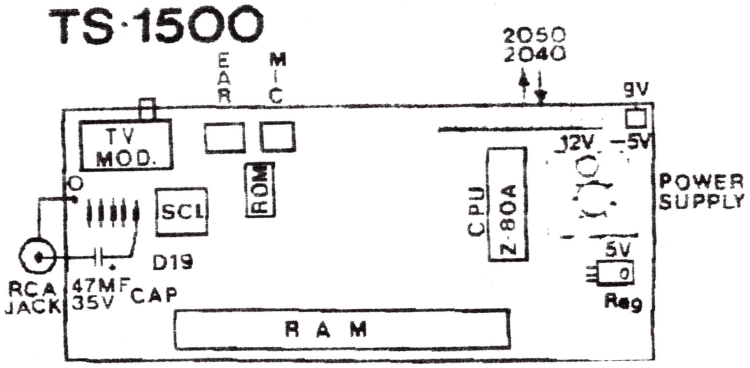
In each case you can either install a jack of your choice (RCA, BNC, or even the miniature SM coax jack, if you are so lucky as to have one, can all be used) on the case near the RF modulator or run a piece of coax out through a small hole filed in the joint of the case. The jack can be hooked to the circuit board with coax or a capacitor.

On the ZX81 the coax can be hooked directly to the RF modulator, which is a large metal box easily spotted on the circuit board. Some people have just run the cable out of the computer box and either put a jack on the end of the cable or hooked the cable directly to a monitor. Others have mounted a jack on the computer case itself and connected the jack to the RF modulator with a short peice of cable for a neater installation. A picture illustrating this method is shown on the next page.

In the case of the TS1000, you can connect the jack to pin 16 of the ULA chip with a 47 μF 16 volt capacitor.

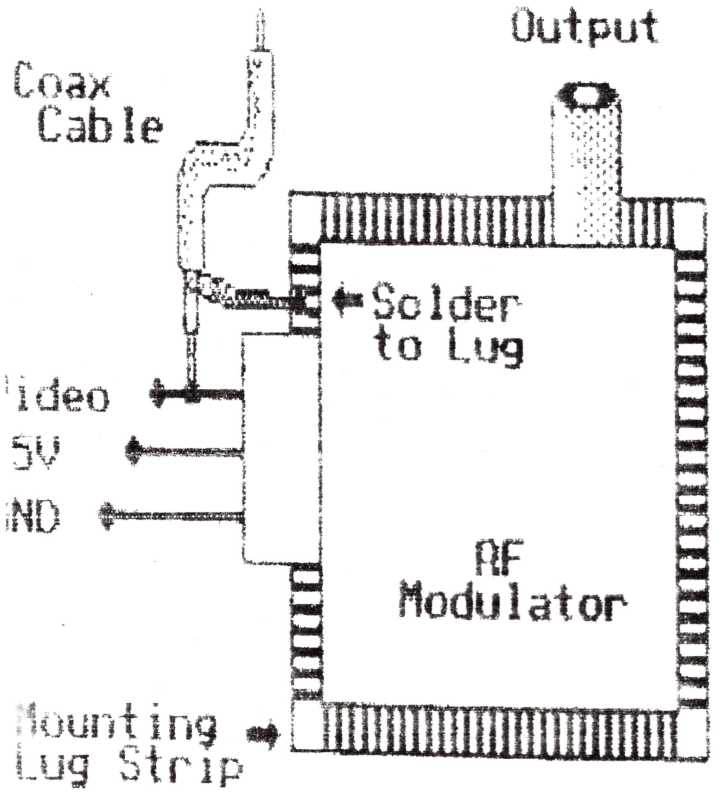


In the case of the TS1500, the capacitor goes to the lower side of D19, which is marked on the board.



Many people find that the TS1000 and the TS1500 actually have cleaner video than the TS2068.

Monitor Output for ZX81



UNCLASSIFIED ADS

WANTED: UNCLASSIFIED ADS for publication in QZX. Cost is 1 cent for each keystroke (characters, blanks, etc.). Payment must be included with order. This is an excellent way to sell your program or unwanted equipment, ask for help, or find a specific program. Send your ad with payment to QZX, 2025 O'Donnell, Las Cruces, NM 88001.

QZX discount: 15% discount on all orders mentioning QZX. T & C Services (address in ad in this issue.)

FREE: One Byte-Back M 16 16 K RAM (no printed circuit board on the feed through socket). Contributed by KA8THG. It would be appreciated if a contribution toward the mailing expenses were made. Send requests to QZX, 2025 O'Donnell, Las Cruces, NM 88001.

FOR SALE: CP/M books. Almost new. Half original price. *The*

Programmer's CP/M Handbook by Andy Johnson-Laird. Osborne. Hardback. 500 pages $419. *The Byte Guide to CP/M* by Mark Dahmke. Mc Graw Hill. 250 pages. $8.50. *CP/M Users Guide* by Thom Hogan. Osborne. 330 pages. $8.95. *The CP/M Plus Handbook* by Alan R. Miller. Sybex. 250 pages. $7.5. *Inside CP/M Plus* by David E. Cortesi. Holt-Rinehart. 260 pages. $9.25. *CP/M Bible* by Waite and Angermeyer. Howard Sams. 430 pages. $9.90. *Users Guide to CP/M Systems* by Bove and Rhodes. Baen. 300 pages. $4.50. $1.00 each shipping and handling. A. F. Burr, 2025 O'Donnell, Las Cruces, NM 88001.

BITS AND BYTES

178 Many magazines carry ads for clear plastic covers for IBM type keyboards to protect them from spills and greasy fingers. The TS2068 and TS1500 keyboards can be given much the same type of protection by laying a peice of plastic wrap such as Saran over them. The keyboard "feel" is preserved too.

179 Many of the new keyboards have a little raised bump on the letters F and J so that touch typists can feel when their fingers are on the home keys. You can fix our Sinclair keyboards in the same way by putting a little dot of clear plastic cement on these keys.

(716) 834-1716 **T & C SERVICES** (716) 834-1716
20 LIBERTY TERRACE
BUFFALO, N.Y. 14215
Call or write for a free catalog of products for the Timex Computer

TS2068 COMPONENTS

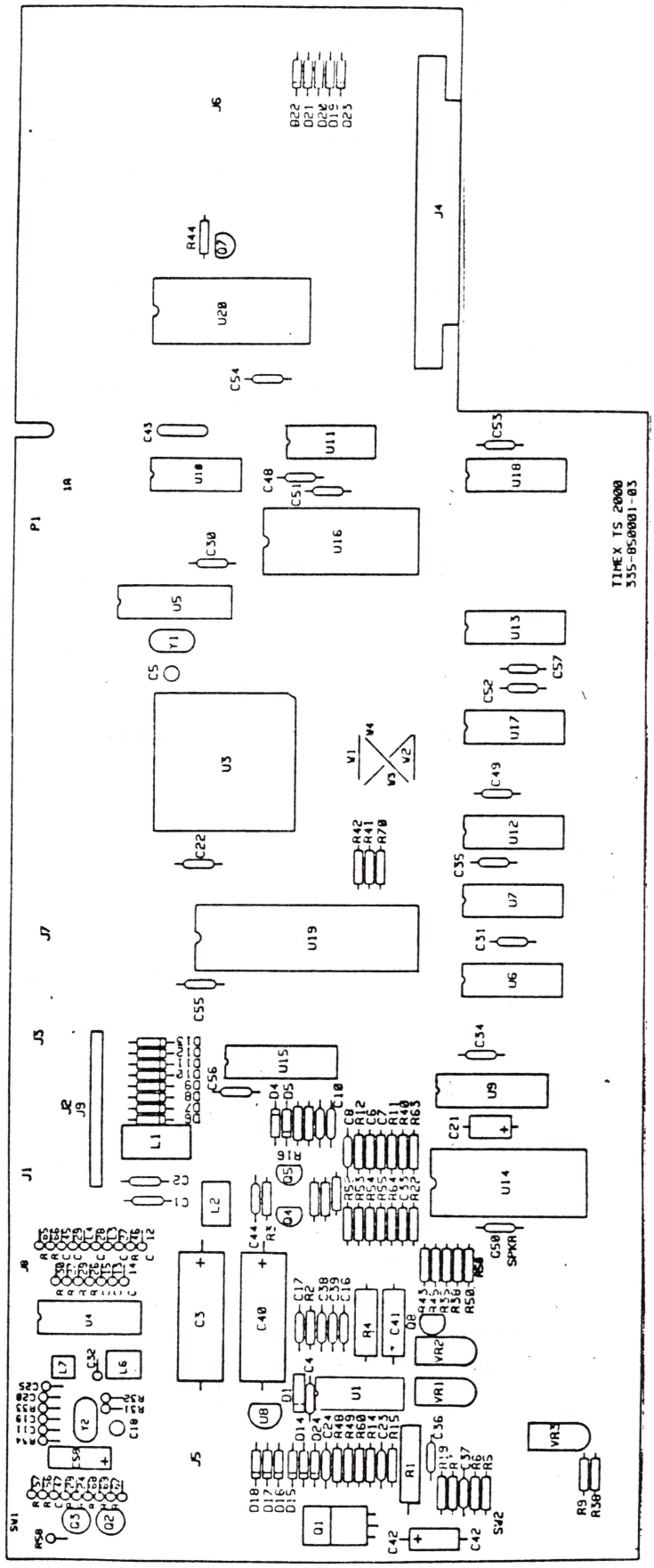
K5XY

On the next page is a board layout for the TS2068. It will help you find the location of various parts that are referred to in modification articles or which may be suspected of failure. In the table which follows, specifics are given about some non-standard parts for replacement purposes. I have not put in the values for all the resistors and capacitors because they can often be identified by looking at the board or the circuit diagram. The circuit diagram has been published before. If some of our readers want me to print the entire parts list I can do it.

Table of TS2068 Parts

Component	Description
CR1	1N5821
CR4 - 28	1N4148
L1	2.2 mH
L2	230 µH
L3,4	Ø.33 µH
L6,7	Ø.12 µH
Q1	PNP D43C1
Q2	PNP 2N2222
Q3	PNP 2N2907
Q4,5	PNP 2N2222
Q7,8	PNP 2N3904
U1	78S40 switching regulator
U3	SCLD
U4	LM1889N Video modulator
U5	74LS244N
U6,7	TMS4416-15 RAM(150 ns)
U8	78L12 regulator
U9	74LS245
U10,11	78LS157N
U12,13	TMS4416-20 RAM(200 ns)
U14	AY38912 sound, I/O
U15	74LS245
U16	23128 Mask ROM (16Kx8)
U17,18	TMS4416-20 RAM(200 ns)
U19	Z80A CPU
U20	2364 ROM (8K x 8)
U21	74LS00
Y1	14.112 MHz Xtal
Y2	3.579545MHz Xtal

Notice that there are a couple of good crystals for the 80 and 20 meter bands listed in the above table. The presence of those frequencies might make one wonder about interference when this computer is used on packet. I cannot give



T82068 PC BOARD COMPONENT LAYOUT

73, K5XY

QZX presents the best software & hardware projects available for the radio amateur. While the contents are believed to be accurate, no warranty is extended on any program or project. No investigation has been made of the claims or reputation of any advertiser. It would be greatly appreciated if all correspondence requiring an answer would be accompanied by a self-addressed stamped envelope (SASE). Copyright by QZX, 1992. All rights reserved, photocopying by permission only. ISSN 1055-1735

Please send me QZX for one year, starting immediately. Enclosed is $15.00 for twelve issues. (Those with addresses not in Canada, the US, or Mexico send $25.00 in US funds for air mail delivery.) Thanks. (92/02)

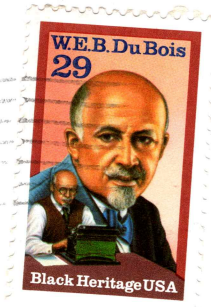
Name _____

Call _____

Address _____

City _____

State ____ Zip _____



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